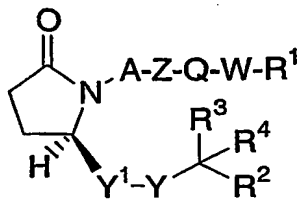
WHAT IS CLAIMED IS:

1. A compound having the structural formula I:



FORMULA I

or a pharmaceutically acceptable salt thereof, wherein,

Y^1 is

1) CH_2CH_2,

2) CHCH, or

3)  ;

Y is C(O) or CH(OH);

A is $(CH_2)_n$;

n is 1, 2, 3, or 4;

W a bond, unsubstituted C 1-6 alkylene, or C 1-6 alkylene substituted with 1, 2, 3, or 4 halogen atoms;

Z is

1) O,

2) S,

3) 

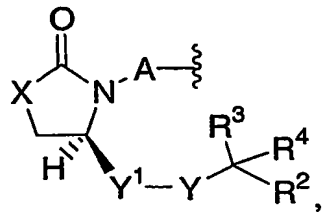
4) HC=CH,

5) C≡C, or

6) a bond;

Q is a disubstituted aryl or heteroaryl ring, wherein one ring atom of the ring is attached to the moiety

and another ring atom is attached to the moiety



R^1 is

COR^5,

OH,

CN,

$(CH_2)_{1-3}CO_2R^6$,

$C(O)NHSO_2R^8$,

SO_2R^7,

$(CH_2)_{0-4}SO_3R^6$,

$CF_2SO_2NH_2$,

SO_2NH_2,

SO_2NHCOR^8,

$PO(OR^7)_2$,

C_{1-4} alkoxy,

hydroxymethylketone, or

$(CH_2)_{0-4}R^k$, wherein R^k is unsubstituted or substituted with 1 to 3 groups of R^a;

R^2 is

1) C_{1-6}alkyl,

2) $(CH_2)_{0-8}C_{6-10}$aryl,

3) $(CH_2)_{0-8}R^m$,

4) $(CH_2)_{0-8}C_{3-8}$cycloalkyl,

5) O-C_{1-10}alkyl,

6) O-C_{6-10}aryl,

7) O-R^m,

8) O-C_{3-10}cycloalkyl

wherein aryl, R^m, and cycloalkyl are unsubstituted or substituted with 1-3 groups of R^b;

R^3 and R^4 are independently selected from the group consisting of

1) halogen, and

2) C_{1-6} alkyl, or

R^3 and R^4, together with the carbon atom to which they are attached, form a C_{3-7} cycloalkyl ring;

R^5 is

1) hydrogen,
2) OH,
3) CH_2OH,
4) C_{1-6} alkoxy,
5) $NHPO_2R^6$,
6) NHR^9,
7) $NHSO_2R^8$, or
8) NR^6R^7;

R^6 and R^7 are independently selected from the group consisting of hydrogen, C_{1-6} alkyl, and C_{3-8} cycloalkyl;

R^8 is selected from the group consisting of hydrogen, C_{6-10}aryl, R^n, and C_{1-4}alkyl;

R^9 is $C(O)R^{10}$ or SO_2R^{10};

R^{10} is hydrogen, C_{6-10} aryl, or C_{1-4} alkyl;

R^a and R^b are independently selected from the group consisting of

1) C_{1-6}alkoxy,
2) C_{1-6}alkyl, unsubstituted or substituted with
   a) C_{1-6} alkoxy,
   b) C_{1-6} alkylthio,
   c) CN,
   d) OH, or
   e) CF_3,
3) CF_3,
4) nitro,
5) amino,
6) cyano,
7) C_{1-6}alkylamino,
8) halogen
9) OR^c,
10) OCH_2R^c, and
11) CH_2OR^c;

R^c is

1) C_{6-10}aryl,
2) R^s, or
3) C_{3-8}cycloalkyl; and

R^k, R^m, R^n and R^s are independently selected from the group consisting of

1) a stable monocyclic heteroaryl ring having 5, 6 or 7 ring atoms, or a stable bicyclic heteroaryl ring having 8, 9, 10, or 11 ring atoms, wherein the monocyclic ring has 1, 2, 3, or 4 heteroatoms, independently selected from the group consisting of O, S or N, and wherein the bicyclic ring has 1, 2, 3, or 4 heteroatoms, independently selected from the group consisting of O, S or N, and

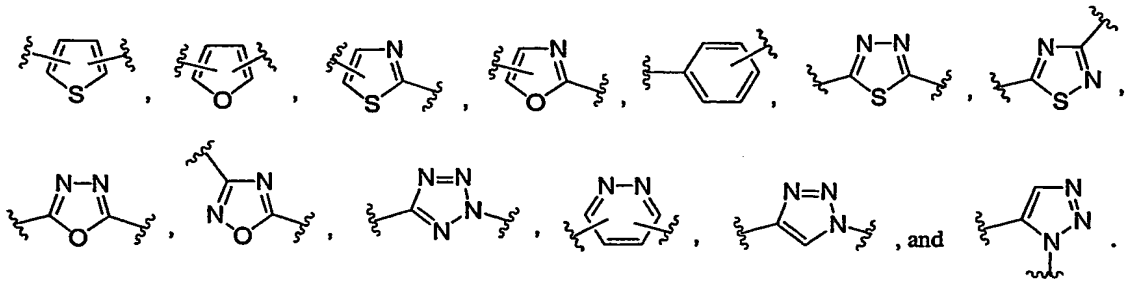
2) a stable monocyclic or bicyclic heterocycloalkyl ring system a stable, saturated monocyclic or bicyclic ring system having 3 to 10 ring atoms, wherein 1, 2, 3, or 4 ring atoms are heteroatoms selected from O, S and N.

2. The compound of Claim 1, or a pharmaceutically acceptable salt thereof, wherein Y^1 is CHCH and Y is CH(OH).

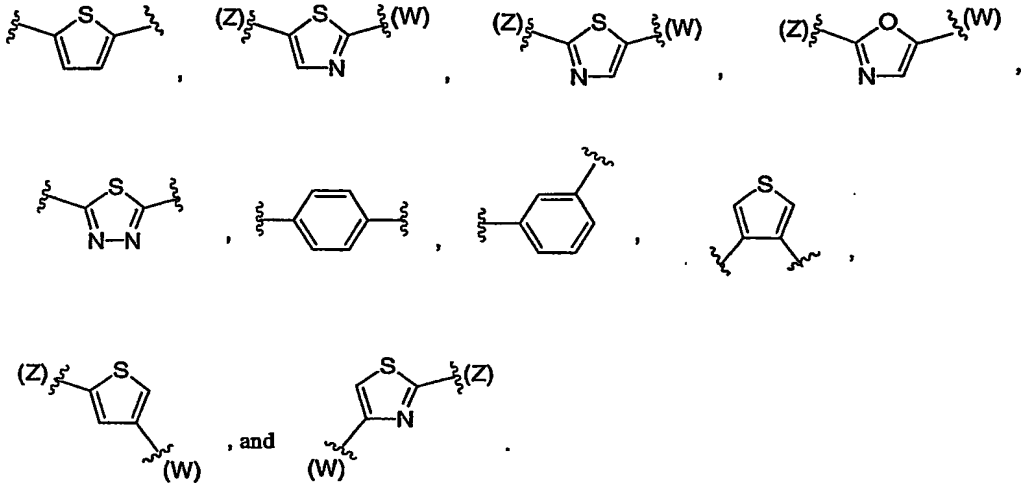
3. The compound of Claim 2, or a pharmaceutically acceptable salt thereof, wherein A is $(CH_2)_{1-3}$ and W is a bond or $(CH_2)_{1-3}$.

4. The compound of Claim 3, or a pharmaceutically acceptable salt thereof, wherein 1) R^1 is COOH or tetrazole, 2) R^2 is phenyl, and 3) R^3 and R^4 are independently selected from the group consisting of hydrogen and halogen, or R^3 and R^4 together with the carbon to which they are attached, form a cyclopropyl ring.

5. The compound of Claim 4, or a pharmaceutically acceptable salt thereof, wherein Q is selected from the group consisting of



6. The compound of Claim 5, or a pharmaceutically acceptable salt thereof, wherein Q is selected from the group consisting of



7. The compound of Claim 6 selected from the group consisting of

(1) 5-(3-{(2*R*)-2-[(1*E*)-4,4-difluoro-3-hydroxy-4-phenylbut-1-enyl]-5-oxopyrrolidin-1-yl}propyl)thiophene-2-carboxylic acid,

(2) (5*R*)-5-[(1*E*)-4,4-difluoro-3-hydroxy-4-phenylbut-1-enyl]-1-{3-[5-(1*H*-tetraazol-5-yl)thien-2-yl]propyl}pyrrolidin-2-one,

(3) 5-(3-{(2*R*)-2-[(1*E*)-4,4-difluoro-3-hydroxy-4-phenylbut-1-enyl]-5-oxopyrrolidin-1-yl}propyl)-1,3-thiazole-2-carboxylic acid,

(4) 2-(3-{(2*R*)-2-[(1*E*)-4,4-difluoro-3-hydroxy-4-phenylbut-1-enyl]-5-oxopyrrolidin-1-yl}propyl)-1,3-thiazole-5-carboxylic acid,

(5) (5*R*)-5-[(1*E*)-4,4-difluoro-3-hydroxy-4-phenylbut-1-enyl]-1-{3-[5-(1*H*-tetraazol-5-yl)-1,3-thiazol-2-yl]propyl}pyrrolidin-2-one,

(6) 2-(3-{(2*R*)-2-[(1*E*)-4,4-difluoro-3-hydroxy-4-phenylbut-1-enyl]-5-oxopyrrolidin-1-yl}propyl)-1,3-thiazole-4-carboxylic acid,

(7) [5-(2-{(2*R*)-2-[(1*E*)-4,4-difluoro-3-hydroxy-4-phenylbut-1-enyl]-5-oxopyrrolidin-1-yl}ethyl)thien-2-yl]acetic acid,

(8) (5*R*)-5-[(1*E*)-4,4-difluoro-3-hydroxy-4-phenylbut-1-enyl]-1-{2-[5-(1*H*-tetraazol-5-ylmethyl)thien-2-yl]ethyl}pyrrolidin-2-one,

(9) 2-(3-{(2*R*)-2-[(1*E*)-4,4-difluoro-3-hydroxy-4-phenylbut-1-enyl]-5-oxopyrrolidin-1-yl}propyl)-1,3-oxazole-5-carboxylic acid,

(10) 5-(3-{(2*R*)-2-[(1*E*)-3-hydroxy-3-(1-phenylcyclopropyl)prop-1-enyl]-5-oxopyrrolidin-1-yl}propyl)thiophene-2-carboxylic acid,

(11) (5*R*)-5-[(1*E*)-3-hydroxy-3-(1-phenylcyclopropyl)prop-1-enyl]-1-{3-[5-(1*H*-tetraazol-5-yl)thien-2-yl]propyl}pyrrolidin-2-one,

(12) 5-(3-{(2*R*)-2-[(1*E*)-4,4-difluoro-3-hydroxy-4-phenylbut-1-enyl]-5-oxopyrrolidin-1-yl}propyl)-1,3,4-thiadiazole-2-carboxylic acid,

(13) 4-(3-{(2*R*)-2-[(1*E*)-4,4-difluoro-3-hydroxy-4-phenylbut-1-enyl]-5-oxopyrrolidin-1-yl}propyl)benzoic acid,

(14) 3-(3-{(2*R*)-2-[(1*E*)-4,4-difluoro-3-hydroxy-4-phenylbut-1-enyl]-5-oxopyrrolidin-1-yl}propyl)benzoic acid,

(15) (5*R*)-5-[(1*E*)-4,4-difluoro-3-hydroxy-4-phenylbut-1-enyl]-1-{3-[3-(1*H*-tetraazol-5-yl)phenyl]propyl}pyrrolidin-2-one,

(16) (5*R*)-5-[(1*E*)-4,4-difluoro-3-hydroxy-4-phenylbut-1-enyl]-1-{3-[4-(1*H*-tetraazol-5-yl)phenyl]propyl}pyrrolidin-2-one,

(17) 3-[5-({(2*R*)-2-[(1*E*)-4,4-difluoro-3-hydroxy-4-phenylbut-1-enyl]-5-oxopyrrolidin-1-yl}methyl)thien-2-yl]propanoic acid,

(18) (5*R*)-5-[(1*E*)-4,4-difluoro-3-hydroxy-4-phenylbut-1-enyl]-1-({5-[2-(1*H*-tetraazol-5-yl)ethyl]thien-2-yl}methyl)pyrrolidin-2-one,

(19) (5*R*)-5-[(1*E*)-4,4-difluoro-3-hydroxy-4-phenylbut-1-enyl]-1-({4-[3-(1*H*-tetraazol-5-yl)propyl]thien-3-yl}methyl)pyrrolidin-2-one,

(20) (5*R*)-5-[(1*E*)-4,4-difluoro-3-hydroxy-4-phenylbut-1-enyl]-1-({4-[2-(1*H*-tetraazol-5-yl)ethyl]thien-2-yl}methyl)pyrrolidin-2-one,

(21) (5*R*)-5-[(1*E*)-4,4-difluoro-3-hydroxy-4-phenylbut-1-enyl]-1-({4-[2-(1*H*-tetraazol-5-yl)ethyl]-1,3-thiazol-2-yl}methyl)pyrrolidin-2-one, and

(22) (5*R*)-5-[(1*E*)-4,4-difluoro-3-hydroxy-4-phenylbut-1-enyl]-1-{3-[2-(1*H*-tetraazol-5-yl)ethyl]benzyl}pyrrolidin-2-one,

and pharmaceutically acceptable salts thereof.

8. A method for treating disorders related to elevated intraocular pressure by: treating ocular hypertension, treating glaucoma, treating macular edema, treating macular degeneration, increasing retinal and optic nerve head blood velocity, increasing retinal and optic nerve tension, providing a neuroprotective effect or treating dry eyes, comprising administering to a patient in need of such treatment a therapeutically effective amount of a compound of Claim 1, or a pharmaceutically acceptable salt thereof.

9. A topical composition comprising the compound of formula I as defined in any one of Claims 1 to 7, or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier.

10. The composition of Claim 9, wherein the composition comprises xanthan gum or gellan gum.

11. The composition of Claim 10, wherein the composition is a solution or a suspension.

12. The method according to Claim 8 further comprising administering to the patient an active ingredient selected from the group consisting of a β-adrenergic blocking agent, a parasympatho-mimetic agent, a Maxi-K channel blocker, a sympathomimetic agent, a carbonic anhydrase inhibitor, a prostaglandin, a hypotensive lipid, a neuroprotectant, and a 5-HT2 receptor agonist, is added to the formulation.

13. The method according to Claim 12 wherein the β-adrenergic blocking agent is timolol, betaxolol, levobetaxolol, carteolol, or levobunolol; the parasympathomimetic agent is pilocarpine; the Maxi-K channel blocker is Penitrem A, paspalicine, charybdotoxin, or iberiotoxin, the sympathomimetic agent is epinephrine, brimonidine, iopidine, clonidine, or para-aminoclonidine; the carbonic anhydrase inhibitor is dorzolamide, acetazolamide, metazolamide or brinzolamide; the prostaglandin is latanoprost, travaprost, unoprostone, rescula, or S1033; the hypotensive lipid is lumigan; the neuroprotectant is eliprodil, R-eliprodil or memantine; and the 5-HT2 receptor agonist is 1-(2-aminopropyl)-3-methyl-1H-imdazol-6-ol fumarate or 2-(3-chloro-6-methoxy-indazol-1-yl)-1-methyl-ethylamine.

14. A compound of formula I of any one of Claims 1 to 7, or a pharmaceutically acceptable salt thereof, for use in medicinal therapy.

15. Use of a compound of formula I of any one of Claims 1 to 7, or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for treating disorders related to elevated intraocular pressure.

16. Use of a compound of formula I of any one of Claims 1 to 7, or a pharmaceutically acceptable salt thereof, as a selective EP_4 receptor agonist.